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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,817	05/24/2001	Stephen A. Constantino	97046CIPDIV (C0698/7138)	3443

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04/22/2002

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EXAMINER

BLANTON, REBECCA A

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 04/22/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-7

<b>Office Action Summary</b>	Application No. 09/864,817	Applicant(s) CONSTANTINO ET AL.	
	Examiner Rebecca A. Blanton	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of: .  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al (JP 05330824) in view of Bruno (U.S. 5,082,811).

Claims 1-4, and 9 are rejected for the same reasons listed on page 2 paragraph 3 of the previous office action dated 19 November 2001.

Regarding claim 10, Egami et al. disclose a process for forming barium-titanate particles that are used for capacitors, as described on page 2 paragraph 3 of the previous office action dated 19 November 2001. The particles are formed in a slurry containing the reactants (page 2 paragraph 1). However, Egami et al. do not disclose coating the barium-titanate particles. Bruno discloses a method for coating barium-titanate particles to improve their dielectric properties for use in capacitors (column 1 lines 7-17). Bruno teaches that the coating materials are added to a slurry of fine particles of the ceramic powder, followed by adding a base, heating and maintaining the reaction conditions long enough for the coating to be deposited on the ceramic particles (column 3 lines 1-10). It would have been obvious to one of ordinary skill in the art at

the time the invention was made to add the coating agents, taught by Bruno, to the slurry of barium titanate particles formed by Egami et al., in order to coat the particles to improve their dielectric properties in view of the teachings of Bruno that ceramic powders with dielectric coatings exhibit excellent electrical properties.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (JP 05330824) in view of Bruno (US 5082811) as applied to claim 1 above, and further in view of Lilley et al. (US 4764493).

Claims 4-6 are rejected for the same reasons listed on page 3 paragraph 2 of the previous office action dated 19 November 2001.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (JP 05330824) in view of Bruno (US 5082811) as applied to claim 1 above, and further in view of Funk (US 5833361).

Claims 7-8 are rejected for the same reasons listed on page 3 paragraph 4 and page 4 paragraph 1 of the previous office action dated 19 November 2001.

### ***Response to Arguments***

Applicant's arguments filed on 03/11/02 have been fully considered but they are not persuasive.

Regarding the applicant's argument that the Egami et al. and Bruno references do not teach the limitations of claim 1. Egami et al. disclose a process for hydrothermally forming barium-titanate particles in solution (page 1 and page 2 paragraph 1). Egami et al. however, do not teach coating the barium-titanate particles. Bruno discloses that ceramic particles that are coated with a thin dielectric layer exhibit

excellent electrical properties (column 2 lines 37-41). The coating, taught by Bruno, is a metal oxide (column 6 lines 31-39). Bruno teaches a method of adding coating agents to slurry of barium-titanate particles (column 3 lines 1-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a coating solution to the slurry of barium-titanate particles produced hydrothermally, as taught by Egami et al., in view of the teaching of Bruno to add a coating solution to the slurry of barium-titanate particles in order to coat the particles with a thin dielectric layer, so that the particles exhibit excellent electrical properties.

Regarding the applicant's argument that Lilley et al. does not teach the step of maintaining the barium-titanate particles in a wet environment prior to coating. Egami et al. discloses the process for hydrothermally forming barium-titanate particles, as described above. Bruno discloses a process for coating barium-titanate particles, also described above. However, neither reference teaches that the barium-titanate based particles are washed prior to coating the particles. Lilley et al. discloses a process for forming barium-titanate particles (abstract). Lilley et al. disclose forming barium-titanate particles by reacting barium hydroxide with titanium dioxide in a solvent (column 2 lines 38-64). Lilley et al. teach that washing the barium-titanate particles is necessary to remove excess barium hydroxide (column 4 lines 48-50). The reference further teaches that two washings in water followed by washing the particles in isopropyl alcohol are used to remove the barium hydroxide (column 4 lines 50-54). In column 6 lines 25-31, Lilley et al. disclose that it is possible to coat the barium-titanate particles by forming slurry of barium-titanate particles in isopropyl alcohol with a metal oxide. Lilley et al.

additionally disclose incorporating the coating step into the production process (column 6 lines 1-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to wash the barium-titanate particles that are formed hydrothermally, as taught by Egami et al., prior to placing them in a coating solution, as taught by Bruno, in view of the teachings of Lilley et al. that it is necessary to wash the particles to remove the excess barium hydroxide.

Regarding the applicant's argument that Funk does not teach the step of maintaining the barium-titanate based particles in a wet environment prior to coating. Egami et al. in view of Bruno makes obvious a process for forming barium-titanate particles hydrothermally, maintaining them in a wet environment, followed by coating them with a metal oxide, as described above. However, neither reference teaches de-agglomerating the coated barium titanate particles by high shear mixing. Funk discloses a high shear mixing apparatus for de-agglomerating ceramic powders (column 1 lines 8-33). Funk further discloses that most ceramic powders are severely agglomerated, and therefore must be subjected to de-agglomeration through high shear mixing (column 1 lines 19-21, 44-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the barium-titanate particles, disclosed by Egami et al., in a high shear mixer following the coating of the barium-titanate particles, as taught by Bruno, in view of the teachings of Funk that ceramic powders tend to be highly agglomerated, and therefore must be subjected to de-agglomeration through high shear mixing.

The de-agglomeration of the coated particles follows the process of hydrothermally forming the barium-titanate particles, maintaining them in a wet environment, and coating them. Funk is merely used to demonstrate a high-shear mixing apparatus that is used to de-agglomerate ceramic powders after their production. The applicant's limitation of maintaining the formed particles in a wet environment prior to coating is made obvious by Egami et al. in view of Bruno, as described above. Therefore, the combination of Egami et al. in view of Bruno, and in further view of Funk makes obvious the limitations of hydrothermally producing barium-titanate particles, maintaining them in a wet environment, followed by coating the particles, which are then subjected to high shear mixing to de-agglomerate the coated particles, as described above.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca A. Blanton whose telephone number is 703-605-4295. The examiner can normally be reached on M - F (7:30am - 3:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

rab *RB*  
April 18, 2002

  
**MICHAEL BARR**  
**PRIMARY EXAMINER**